OIPE IAP24
MAY 29 2007
PATENT & TRADEMARK OFFICE

FIG. 1

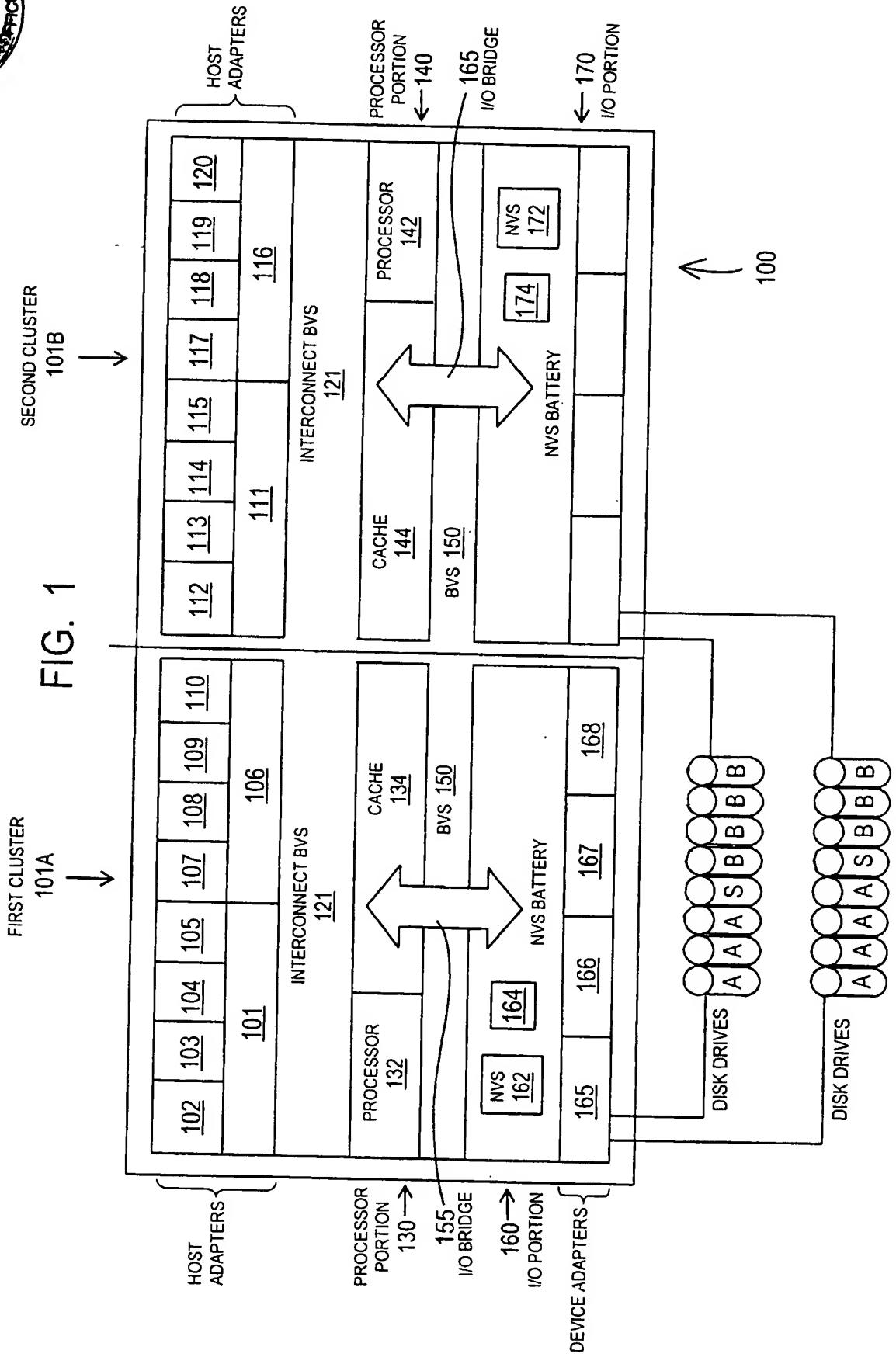


FIG. 2

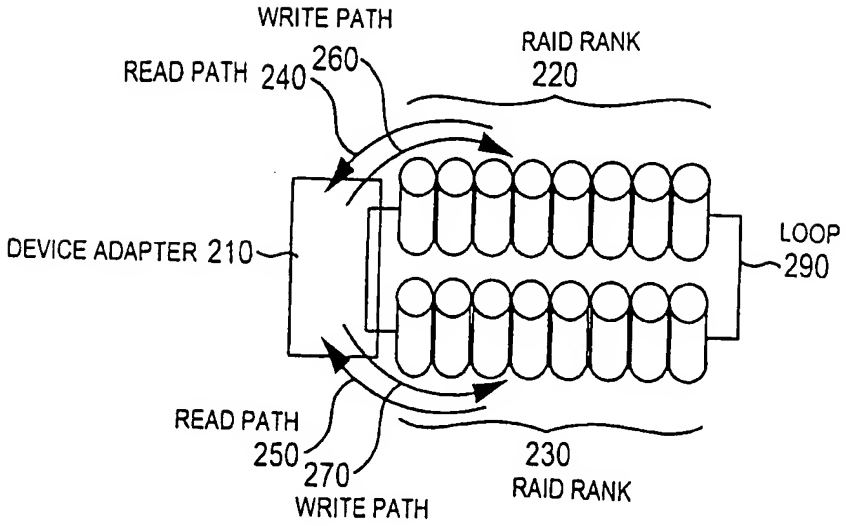

WRITE PATH
260
RAID RANK
220
READ PATH
240
DEVICE ADAPTER 210
LOOP
290
READ PATH
250
270
WRITE PATH
230
RAID RANK

FIG. 3

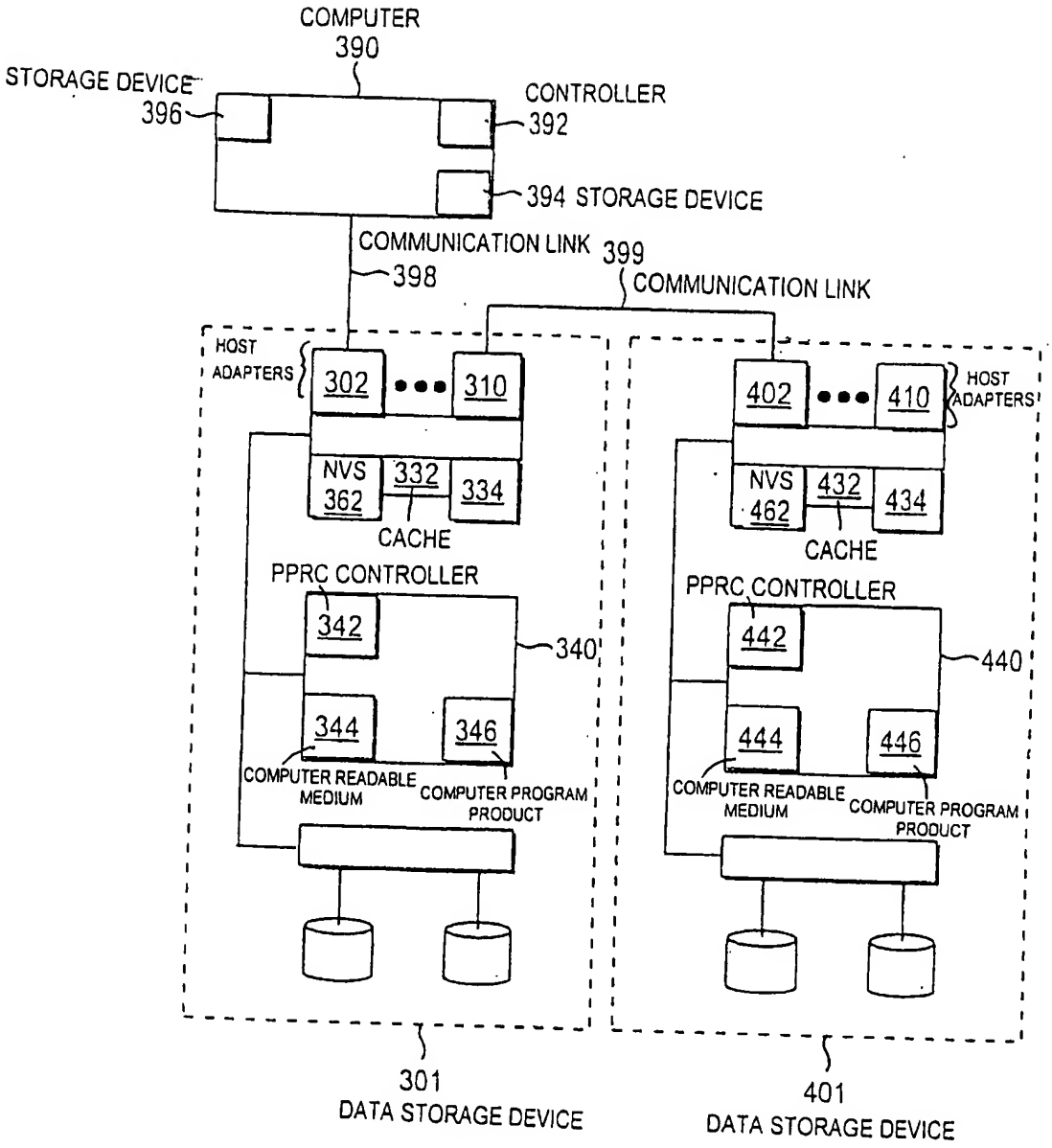

COMPUTER
390
STORAGE DEVICE
396
CONTROLLER
392
394 STORAGE DEVICE
COMMUNICATION LINK
398
399
COMMUNICATION LINK
HOST
ADAPTERS
302
310
NVS
362
332
334
CACHE
PPRC CONTROLLER
342
340
344
346
COMPUTER READABLE
MEDIUM
COMPUTER PROGRAM
PRODUCT
402
410
HOST
ADAPTERS
NVS
462
432
434
CACHE
PPRC CONTROLLER
442
440
444
446
COMPUTER READABLE
MEDIUM
COMPUTER PROGRAM
PRODUCT
301
DATA STORAGE DEVICE
401
DATA STORAGE DEVICE

FIG. 4A

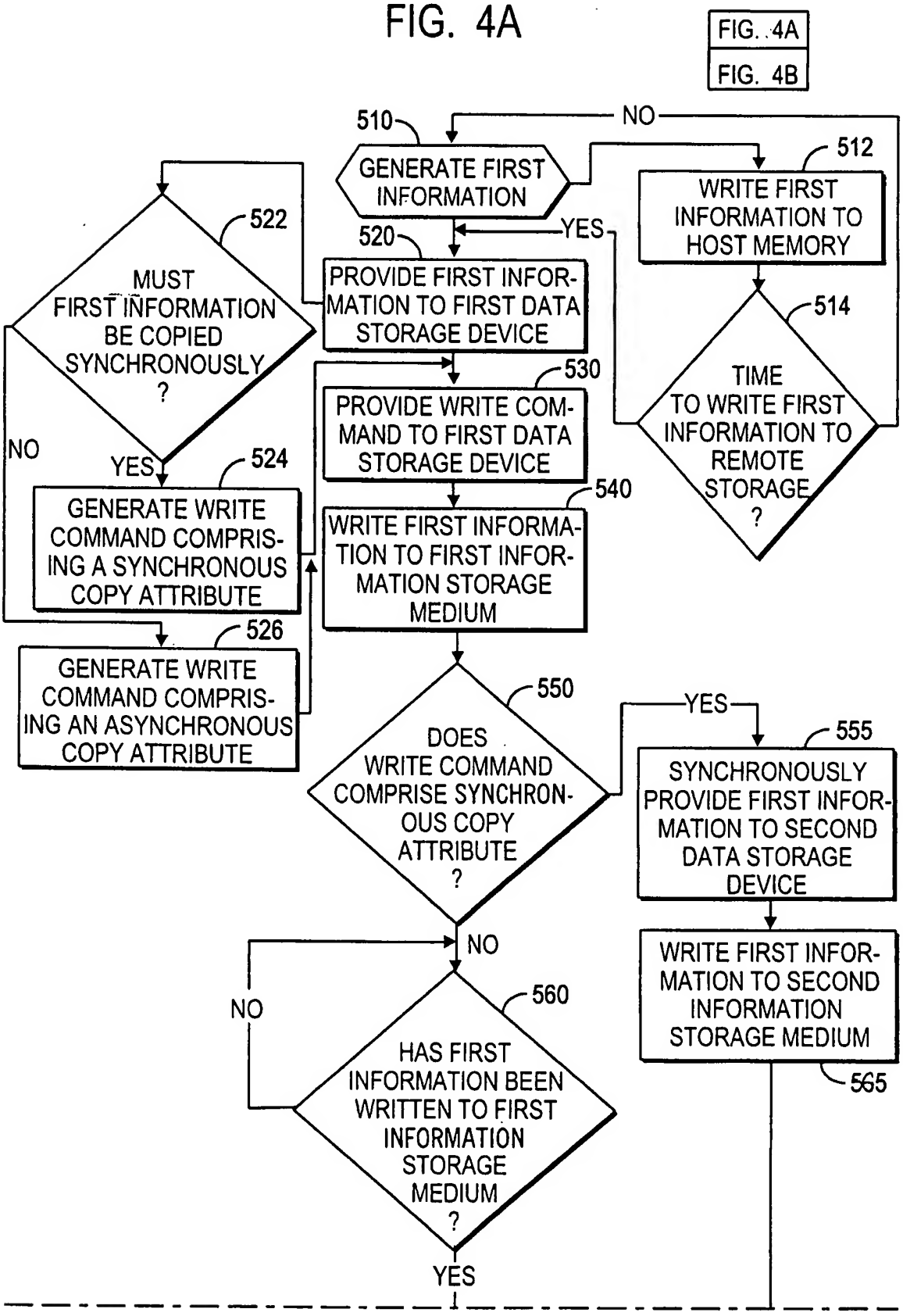
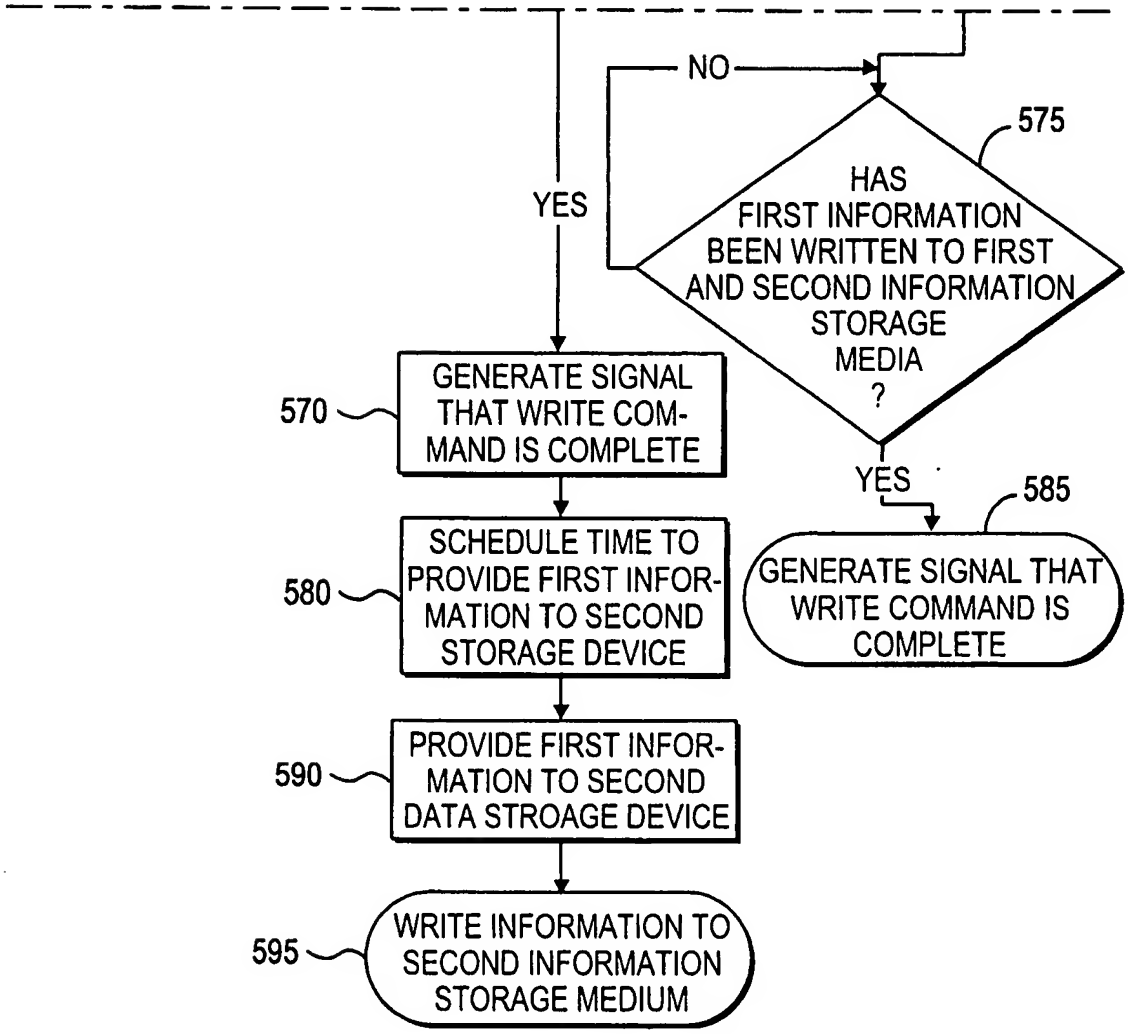


FIG. 4A
FIG. 4B
510
GENERATE FIRST INFORMATION
NO
512
WRITE FIRST INFORMATION TO HOST MEMORY
YES
520
PROVIDE FIRST INFORMATION TO FIRST DATA STORAGE DEVICE
522
MUST FIRST INFORMATION BE COPIED SYNCHRONOUSLY ?
514
TIME TO WRITE FIRST INFORMATION TO REMOTE STORAGE ?
NO
YES
524
GENERATE WRITE COMMAND COMPRISING A SYNCHRONOUS COPY ATTRIBUTE
530
PROVIDE WRITE COMMAND TO FIRST DATA STORAGE DEVICE
540
WRITE FIRST INFORMATION TO FIRST INFORMATION STORAGE MEDIUM
526
GENERATE WRITE COMMAND COMPRISING AN ASYNCHRONOUS COPY ATTRIBUTE
550
DOES WRITE COMMAND COMPRISE SYNCHRONOUS COPY ATTRIBUTE ?
YES
555
SYNCHRONOUSLY PROVIDE FIRST INFORMATION TO SECOND DATA STORAGE DEVICE
NO
WRITE FIRST INFORMATION TO SECOND INFORMATION STORAGE MEDIUM
565
NO
560
HAS FIRST INFORMATION BEEN WRITTEN TO FIRST INFORMATION STORAGE MEDIUM ?
YES

FIG. 4B


NO
575
HAS FIRST INFORMATION BEEN WRITTEN TO FIRST AND SECOND INFORMATION STORAGE MEDIA ?
YES
YES
585
GENERATE SIGNAL THAT WRITE COMMAND IS COMPLETE
570
GENERATE SIGNAL THAT WRITE COM-MAND IS COMPLETE
580
SCHEDULE TIME TO PROVIDE FIRST INFOR-MATION TO SECOND STORAGE DEVICE
590
PROVIDE FIRST INFOR-MATION TO SECOND DATA STROAGE DEVICE
595
WRITE INFORMATION TO SECOND INFORMATION STORAGE MEDIUM